



SAFETY HEALTH AND
ENVIRONMENTAL AFFAIRS
JUN 24 1991

MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 2552 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 2552 CORROSION INHIBITOR

DESCRIPTION: An aqueous solution of an amine

NFPA 704M/HMIS RATING 2/2 HEALTH 2/2 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX. %
Diethylaminoethanol	100-37-8	20-40

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: Combustible. Causes eye injury and skin irritation. May be harmful if inhaled, ingested or absorbed through the skin. Do not get in eyes. Avoid contact with skin and clothing. Wear goggles or face shield when handling. Avoid prolonged or repeated breathing of vapor. Use with adequate ventilation. Do not take internally. Keep container closed when not in use.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN: Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician at once.

INGESTION: Do not induce vomiting. Give water. Call a physician at once.

INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 2552 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 4 FIRST AID INFORMATION

(CONTINUED)

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: Corrosive to the eyes with possible permanent damage depending on the length of exposure and on the first aid action given.

SKIN CONTACT: Corrosive to the skin with possible permanent damage depending on the length of exposure and on the first aid action given.

INGESTION: Can be harmful or fatal.

INHALATION: May cause irritation to the respiratory tract and lungs.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but toxicity studies of the ingredient(s) in Section 2 have been reviewed. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):
Diethylaminoethanol LD50 = 1,300 mg/kg

ACUTE DERMAL TOXICITY (ALBINO RABBITS):
Diethylaminoethanol LD50 = 1,260 mg/kg

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):
SKIN IRRITATION INDEX DRAIZE RATING: Corrosive

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):
EYE IRRITATION INDEX DRAIZE RATING: Corrosive

OTHER TOXICITY RESULTS: Daily inhalation of 500 ppm of diethylaminoethanol for 5 days showed eye and nasal irritation with mild tremors for the 5-day



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 2552 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 6 TOXICOLOGY INFORMATION

(CONTINUED)

period. Corneal opacity resulted. By day four, 4 of 20 animals died. Autopsy showed lung irritation, but no other organ involvement.

CHRONIC TOXICITY RESULTS: One month exposure to 200 ppm of diethylaminoethanol resulted in 7/50 rat deaths. Bronchopneumonia was the apparent cause of death. At the end of three months, animals adapted, and after six months, histopathologic results of exposed and control animals were not significantly different.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Colorless	FORM: Liquid	ODOR: Amine
DENSITY:	8.2 lbs/gal.	
SOLUBILITY IN WATER:	Completely	
SPECIFIC GRAVITY:	0.98 @ 60 Degrees F	ASTM D-1298
pH (NEAT) =	11.7	ASTM E-70
VISCOSITY:	8.1 cps @ 77 Degrees F	ASTM D-2983
FREEZE POINT:	11 Degrees F	ASTM D-1177
FLASH POINT:	192 Degrees F (PMCC)	ASTM D-93

NOTE: These physical properties are typical values for this product.

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: 192 Degrees F (PMCC) ASTM D-93

EXTINGUISHING MEDIA: Based on the NFPA guide, use dry chemical, alcohol foam, carbon dioxide or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For large fires, use water spray or fog, thoroughly drenching the burning material.

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx under fire conditions. Containers exposed in a fire should be cooled with water to prevent vapor pressure buildup leading to a rupture.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: N-nitrosamines, many are cancer causing agents to laboratory animals, may be formed when certain amines are mixed with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations.

Avoid contact with strong acids (eg. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) which can generate heat, splattering or boiling and the release of toxic fumes.



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 2552 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 9 REACTIVITY INFORMATION

(CONTINUED)

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO₂, NO_x may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: If it is possible to generate significant levels of vapors or mists, a NIOSH approved or equivalent amine respirator is recommended.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Wear gloves, boots, apron and a face shield with chemical splash goggles (ANSI Z 87.1 requirements and selection of gloves, goggles, shoes, etc.). A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C,



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 2552 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 11 SPILL AND DISPOSAL INFORMATION

(CONTINUED)

(i.e. D001 through D017) nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

AQUATIC DATA:

96 hour static acute LC50 to Bluegill Sunfish = Greater than 100, less than 1,000 ppm

96 hour static acute LC50 to Rainbow Trout = Greater than 100, less than 1,000 ppm

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - COMBUSTIBLE LIQUID, N.O.S.
COMBUSTIBLE LIQUID NA 1993
CONTAINS - DIETHYLAMINOETHANOL

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.

Diethylaminoethanol - Corrosive, combustible

Diethylaminoethanol = TWA 10 ppm (skin) ACGIH/TLV

CERCLA/SUPERFUND, 40 CFR 117, 302:

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 2552 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

- XX Immediate (acute) health hazard
- Delayed (chronic) health hazard
- XX Fire hazard
- Sudden release of pressure hazard
- Reactive hazard

Under Section 311, submittal of MSDS's or a list of product names to the local emergency planning commission, state emergency response commission and local fire department is required after October 17, 1987 if you have:

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

FOOD AND DRUG ADMINISTRATION (FDA):

Federal Food, Drug and Cosmetic Act:

When use situations necessitate compliance with FDA regulations, this product is acceptable under 21 CFR 173.310 Boiler Water Additive.

The following use limitations apply: Not to exceed 37.0 pp, in steam.

This product cannot be used in Boiler Water where the steam generated comes in contact with milk or mild products.

U. S. DEPARTMENT OF AGRICULTURE (USDA):

USDA Inspection and Grading Programs - Food Safety and Inspection Service:

This product is authorized by USDA for use in federally inspected



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 2552 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION

(CONTINUED)

meat and poultry plants. Authorized use(s) is/are under category
The following limitations apply: Not to exceed 37.5 ppm in steam.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
If this product becomes a waste, it does not meet the criteria of a hazardous waste.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/ formerly
Sec. 307, 40 CFR 116/formerly Sec. 311:
None of the ingredients are specifically listed.

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

None of the chemicals on the current Proposition 65 list are known to be present in this product.

MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:

The following ingredients shown are disclosed for compliance with State Right To Know Laws:

Diethylaminoethanol	100-38-8
Water	7732-18-5

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 2552 CORROSION INHIBITOR

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 16 USER'S RESPONSIBILITY

(CONTINUED)

representative for any further information.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 33-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, Doull, J., Klaassen, C. D., and Admur, M. O., eds., Macmillian Publishing Company, Inc., N. Y., 2nd edition, 1980.

CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N. H., and Hughes, J. P., eds., J. P. Lipincott Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, OH, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, OH.

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist

DATE CHANGED: 02/22/90

DATE PRINTED: 02/18/91